Reminder: The exam is Thursday, October 29.

General Information: The exam will consist of terms to define, proofs to complete, computational problems, and the dreaded true/false. It is worth 100 points.

Section 2.1: Cosets

• Terms to know: left coset, right coset, index, Lagrange’s Theorem
• Skills to drill: be able to find the left/right cosets of a given subgroup in a given group; be able to determine if two cosets are equal; be able to apply Lagrange’s Theorem to determine the number of cosets or the possible orders of subgroups
• Proofs to know: 2.1.9, 2.1.16

Section 2.2: Homomorphisms

• Terms to know: homomorphism, isomorphism, kernel
• Skills to drill: be able to determine if a given map is a homomorphism or an isomorphism, be able to find the kernel of a given homomorphism
• Proofs to know: 2.2.17

Section 2.3: Normal Subgroups

• Terms to know: normal subgroup, normalizer
• Skills to drill: be able to determine if a given subgroup is a normal subgroup of a group;
• Proofs to know: 2.3.3, 2.3.21

Section 2.4: Quotient Groups

• Terms to know: quotient group, First Isomorphism Theorem
• Skills to drill: be able to work in the quotient group, i.e. list elements, find orders of elements; be able to use the First Isomorphism Theorem to establish two groups are isomorphic
• Proofs to know: 2.4.9, 2.4.20